Docket No.: 063288-0656 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
Bradford D. Henry et al.	:	Confirmation Number: 4669
Application No.: 10/823,787	:	Group Art Unit: 3721
Filed: April 14, 2004	:	Examiner: Tawfik, Sameh

For: METHOD AND DEVICE FOR CONTROLLING ENVELOPE FLAP DURING INSERTION

TRANSMITTAL OF APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is Appellant's Appeal Brief in support of the Notice of Appeal filed June 2, 2006. Please charge the Appeal Brief fee of $500.00 to Deposit Account 500417.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due under 37 C.F.R. 1.17 and 41.20, and in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Brian K. Seidleck
Registration No. 51,321

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BKS:KEG:idw
Facsimile: 202.756.8087
Date: August 2, 2006

Please recognize our Customer No. 20277 as our correspondence address.

TABLE OF CONTENTS

Docket No.: 063288-0656 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
Bradford D. Henry et al.	:	Confirmation Number: 4669
Application No.: 10/823,787	:	Group Art Unit: 3721
Filed: April 14, 2004	:	Examiner: Tawfik, Sameh

For: METHOD AND DEVICE FOR CONTROLLING ENVELOPE FLAP DURING INSERTION

APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed June 2, 2006, wherein Appellant appeals from the Primary Examiner's rejection of claims 1, 3-21 and 23-28.

I. Real Party In Interest

This application has been assigned to Bowe Bell + Howell Company. A copy of the executed assignment, as filed on August 2, 2006, accompanies this Appeal Brief.

II. Related Appeals and Interferences

Appellant is unaware of any related Appeal or Interference.

III. Status of Claims

Claims 1, 3-21 and 23-29 are pending. Claims 1, 3-21 and 23-28 have been finally rejected and it is from the final rejection of claims 1, 3-21 and 23-28 that this Appeal is taken. Claim 29 is withdrawn from consideration pursuant to the previous restriction requirement and is not subject to this Appeal.

IV. Status of Amendments

No Amendment has been filed subsequent to the issuance of the final Office Action dated February 2, 2006.

V. Summary of Claimed Subject Matter

The present claimed subject matter relates to high speed envelope transport and packing systems for controlling an envelope flap during packing (page 1, lines 8-10 of the present specification).

Independent claim 1 describes a high-speed envelope transport and packing system comprising a conveyor (50) for conveying an open envelope (4) having a flap (8), a packing station for inserting an object into a conveyed open envelope (see Fig. 6), and a bending member (52, 54, 56, 58) disposed upstream of the packing station (see Figs. 4A-4B and 5A-5B). The bending member is configured to impart a bend in a conveyed open envelope (4) by displacing a center portion of the open envelope relative to widthwise distal end portions of the conveyed open envelope and to maintain a bend in a conveyed open envelope until the open envelope is gripped by a gripping device in such a manner as to provide access to an interior of the open envelope or until an object is at least partially inserted into an

interior of the open envelope (4) (page 7, line 17 through page 8, line 20 of the present specification). The bending member is configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope (page 6, lines 3-8 and page 8, lines 5-12 of the present specification).

Independent claim 21 describes a high-speed envelope transport and packing system in accord with the present disclosure and includes a bending member (52, 54, 56, 58) configured to bend a conveyed envelope (4) about the z-axis during conveyance of the conveyed envelope to increase the moment of inertia I_x of the conveyed envelope about the z-axis above a corresponding moment of inertia I_x of the conveyed envelope (4) in a flat state (Figs. 3A-3B; page 6, line 9 through page 7, line 11 of the present specification). The bending member (52, 54, 56, 58) is configured to bend a conveyed envelope about an axis that is substantially perpendicular to a joint between the flap and the conveyed envelope (page 6, lines 3-8 and page 8, lines 5-12 of the present specification).

VI. Grounds of Rejection To Be Reviewed By Appeal

Whether claims 1, 3-21 and 23-28 fail to comply with the written description requirement under the first paragraph of 35 U.S.C. § 112;

whether claims 1, 3, 9, 10 and 17-21 are anticipated by Long et al. (U.S. Pat. No. 5,47,941, hereinafter "Long") under 35 U.S.C. § 102(b);

whether claims 11, 15, 16 and 23 are unpatentable over Long under 35 U.S.C. § 103(a); and

whether claims 4-8, 12-14 and 24-28 are unpatentable over Long in view of Haas et al. (U.S. Patent No. 4,798,040, hereinafter "Haas") under 35 U.S.C. § 103(a).

VII. Argument

The Rejection of Claims 1, 3-21 and 23-28 Under 35 U.S.C. § 112, First Paragraph

At page 2 of the final Office Action dated February 2, 2006, the Examiner asserted that there is no support in the specification for the claim phrase "the bending member is configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope" as recited in independent claims 1 and 21. In the Advisory Action dated May 18, 2006, the Examiner does not appear to respond to Appellant's arguments presented in Request for Reconsideration submitted under 37 C.F.R. § 1.116 on May 2, 2006.

The written description inquiry is a factual one and must be assessed on a case-by-case basis. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991) (quoting *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) ("Precisely how close the original description must come to comply with the description requirement of § 112 must be determined on a case-by-case basis.")). In order to satisfy the written description requirement, the disclosure as originally filed does not have to provide in *haec verba* support for the claimed subject matter at issue. *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1570, 39 USPQ2d 1895, 1904 (Fed. Cir. 1996). Nonetheless, the disclosure must convey with reasonable clarity to those skilled in the art that the inventor was in possession of the invention. *Vas-Cath Inc.*, 935 F.2d at 1563-64, 19 USPQ2d at 1116-17. As such, the written description requirement is satisfied if one skilled in the art, reading the original disclosure, would have reasonably discerned the limitation at issue in the claims. *Waldemar Link GmbH & Co. v. Osteonics Corp.*, 32 F.3d 556, 558, 31 UPSQ2d 1855, 1857 (Fed. Cir. 1994). In applying the above legal tenets to the exigencies of this case, Appellant submits that one having ordinary skill in the art, reading the original disclosure, would have reasonably discerned the above stated claim limitation.

It is initially noted that the claim limitation identified by the Examiner was present in originally filed claims 2 and 22. In the Amendment previously submitted on December 6, 2005, in response to the Office action dated September 6, 2005, the subject matter of claims 2 and 22 was incorporated into claims 1 and 21, respectively. The originally filed claims are part of the original written description.

Moreover, Appellant references page 6, first full paragraph of the Detailed Description section of the specification, wherein it is described that the present subject matter improves control of a flap on an envelope in an envelope packing or inserting system by bending the envelope about an axis that is substantially perpendicular to a connecting edge between the flap and an envelope body of the envelope. Figs. 3A and 3B respectively illustrate the cross-sections of an envelope when the envelope is flat and when the envelope is bent. These cross-sections are taken along a x-axis, which is substantially parallel to the connecting edge of the envelope.

Further, as described at page 8, second full paragraph of the Detailed Description section of the specification, the conveyor 50 (Fig. 6) is described. The conveyor 50 depicted in Fig. 6 comprises a packing station wherein an object or packet, broadly characterized as insertion materials, may be inserted into a conveyed open envelope 4. The packing station comprises the portion of the conveyor which includes the single rail 54 (bending member). The rail 54 is configured to impart a bend in a conveyed open envelope 4 by displacing a center portion of the open envelope relative to widthwise distal end portions of the open envelope and to maintain a bend in the conveyed envelope until the envelope is gripped by a gripping device (not shown) in such a manner as to provide access to an interior of the envelope or until an object is at least partially inserted into an interior of the envelope.

Therefore, in view of the foregoing Appellant respectfully submits that the specification fully describes a bending member configured to bend an open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope. Indeed, the claim limitation at issue is described in such a reasonable way that would have been recognized by one having ordinary skill in

the art. Clearly, Appellant was in possession of the bending member concept and recognized its inventiveness since Appellant recited it in the original claims. Accordingly, the rejection is not legally viable and should be reversed.

The Rejection of Claims 1, 3, 9, 10 and 17-21 Under 35 U.S.C. § 102(b) Predicated Upon Long

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision always rests upon the Examiner. *In re Mayne*, 41 USPQ2d 1451 (Fed. Cir. 1997); *In re Duel*, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Bell*, 26 USPQ2d 1529 (Fed. Cir. 1993). Appellant submits that this burden has not been established.

Appellant submits that the factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 66 USPQ2d 1801 (Fed. Cir. 2003); *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002). In this case, there are significant differences between the claimed subject matter and the machine disclosed by Long that would preclude the factual determination that Long identically describes the claimed subject matter within the meaning of 35 U.S.C. § 102.

Independent Claim 1

In response to Appellant's arguments submitted on December 6, 2005, the Examiner at page 7 of the final Office Action, stated that claims 1 and 21 do not positively recite that "the bending member is configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope" since Appellant recites the terms "about" and

"substantially". Moreover, the Examiner at page 8 of the Office action, stated that FIG. 6B of Long discloses that the bending member 52 is configured to bend the open envelope 14 about an axis that is substantially perpendicular to a joint between the flap and the open envelope via the axis perpendicular to any joint between the flap and the open envelope.

In the Advisory Action dated May 18, 2006, the Examiner maintained the rejection and asserted that Long discloses the claimed subject matter since the claim term "substantially" renders the limitations following this term "indefinite" and "not positively recited". The Examiner further stated that Long could be considered as showing the claimed bending member configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope since the flaps adjacent to edges 56a and 56b (Fig. 1) are located substantially perpendicular to the bending member.

Independent claim 1 describes that the bending member imparts a bend in the conveyed open envelope by displacing a center portion of the conveyed open envelope relative to widthwise distal end portions of the conveyed open envelope and that the bending member is configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope.

In contrast, as depicted in FIG. 6B, Long discloses an envelope stuffing device with feed belts 50a, 50b and 52 used to bend the envelope along its length. Long's feed belts 50a, 50b and 52 bend the envelop about an axis that is parallel to the joint between the flap and the envelope. Moreover, with respect to the Examiner's statement in the Advisory Action regarding the closed/sealed flaps adjacent to edges 56a and 56b (Fig. 1), Appellant notes that claim 1 requires that the bending member impart a bend in the conveyed open envelope by displacing a center portion of the conveyed open envelope relative to widthwise distal end portions of the conveyed open envelope. Long's feed belts 50a, 50b and 52 impart a bend in the envelope by displacing a center portion of the envelope relative to

the lengthwise end portions of the conveyed envelope. See Figs 6A and 6B. As clearly depicted in FIG. 6B of Long, an envelope stuffing device is shown with feed belts 50a, 50b and 52 used to bend the envelope along its length not its width. In other words, Long's upper feed belt 52 in conjunction with the lower feed belts 50a and 50b, bend the envelop about an axis that is parallel to the joint between the flap and the envelop -- not substantially perpendicular as required in claim 1. As such, Long fails to disclose a bending member configured to bend an open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope.

With respect to the claim terms "about" and "substantially" as recited in claim 1, Appellant submits that the plain meaning of term "about" as used in claim 1 is intended to mean "in relation to" or "with reference to" and not "approximately or "nearly" as is believed to be suggested by the Examiner. Moreover, the plain meaning of the term "substantially" is intended to mean "considerably" or "significantly". Thus, Appellant fails to understand the Examiner's position that the claim terms "about" and "substantially" somehow erase or render indefinite, the express limitations positively recited in claim 1.

Firstly, it is legally erroneous for the Examiner to ignore any claim limitation. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). Secondly, indefiniteness under the second paragraph of 35 U.S.C. § 112 is a question of law. *Tillotson Ltd. v. Walbro Corp.*, 831 F.2d 1033, 4 USPQ2d 1450 (Fed. Cir. 1987); *Orthokinetics Inc. v. Safety Travel Chairs Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). The PTO is required to discharge its initial burden for providing a basis in fact and/or cogent reasoning to support the ultimate legal conclusion that one having ordinary skill in art, with the supporting specification in hand, would not be able to reasonably ascertain the scope or protection defined by the claim. *In re Cortwright*, 165 F.3d 1353, 49 USPQ 2d 1464 (Fed. Cir. 1999). Consistent judicial precedent holds that reasonable precision in light of the particular subject matter involved is all that is required by the second paragraph of 35 U.S.C. § 112.

Miles Laboratories, Inc. v. Shandon, Inc., 27 USPQ 2d 1123 (Fed. Cir. 1993); *North American Vaccine, Inc. v. American Cyanamide Co.*, 28 USPQ 2d 1333 (Fed. Cir. 1993); *U.S. v. Telectronics, Inc.*, 8 USPQ 2d 1217 (Fed. Cir. 1988). In applying the above legal tenets to the exigencies of this case, Appellant submits that one having ordinary skill in the art would not have been befuddled by the use of the word "about" or "substantially" particularly as employed in the context of the claimed invention. Indeed, one having ordinary skill in the art would not have difficulty understanding the scope of the presently claimed invention, particularly when reasonably interpreted in light of the supporting specification. The Examiner provided no arguments to justify why one having ordinary skill in the art would have had difficulty understanding Appellant's claimed subject matter. Therefore, it is respectfully submitted that claim 1 is compliant with the requirements of the second paragraph of 35 U.S.C. § 112.

Independent Claim 21

Independent claim 21 describes, *inter alia*, that the bending member is configured to bend a conveyed envelope about the z-axis during conveyance and that the bending member is configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope.

As described in the present application at page 6, lines 3-6 and 14-15, when envelope 4 is bent either up or down (Fig. 3B), the z-axis is perpendicular with the page illustrating Fig 3B and substantially perpendicular to the connecting edge between the flap and an envelope body of the envelope. The cross-section of the envelope in Fig. 3B is taken along a x-axis, which is substantially parallel to the connecting edge of the envelope.

As depicted in FIG. 6B of Long, an envelope stuffing device is disclosed with feed belts 50a, 50b and 52 used to bend the envelope along its length. Long's feed belts 50a, 50b and 52 bend the envelop about an axis that is parallel to the joint between the flap and the envelope. Moreover, with respect to the Examiner's statement in the Advisory Action regarding the closed/sealed flaps adjacent to edges 56a and 56b (Fig. 1), Appellant notes that claim 21 requires that the bending member is configured to bend a conveyed envelope about the z-axis during conveyance. Therefore, the bend is positioned relative to widthwise distal end portions of the conveyed envelope.

In contrast, Long's feed belts 50a, 50b and 52 impart a bend in the envelope by displacing a center portion of the envelope relative to the lengthwise end portions of the conveyed envelope. See Figs 6A and 6B. As clearly depicted in FIG. 6B of Long, an envelope stuffing device is shown with feed belts 50a, 50b and 52 used to bend the envelope along its length not its width. In other words, Long's upper feed belt 52 in conjunction with the lower feed belts 50a and 50b, bend the envelop about an axis that is parallel to the joint between the flap and the envelop -- not substantially perpendicular as required in claim 21. As such, Long fails to disclose a bending member configured to bend an open envelope about an axis (i.e. the z-axis) that is substantially perpendicular to a joint between the flap and the open envelope.

Claim 21 further recites that the moment of inertia of the conveyed envelope about the z-axis is increased above a corresponding moment of inertia of the conveyed envelope in a flat state. The Examiner, at page 4 of the final Office action, refers to Figs. 6A and 6B of Long for allegedly disclosing the recited limitation regarding the moment of inertia. However, it is not apparent, and the Examiner has not specifically indicated where Long makes any mention of the moment of inertia of the conveyed envelope as recited in claim 21. The Examiner did not discharge the judicially imposed initial burden of specifically pointing out where the applied reference discloses that moment of inertia of the conveyed envelope about the z-axis is increased above a corresponding moment of inertia of the

conveyed envelope in a flat state, as recited in claim 21. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

With respect to the claim terms "about" and "substantially" as recited in claim 21, Appellant incorporates herein the arguments previously advanced regarding these terms. It is respectfully submitted that claim 21 is compliant with the requirements of the second paragraph of 35 U.S.C. § 112 for substantially the same reasons as claim 1.

Accordingly, Long fails to identically disclose every feature recited in independent claims 1 and 21 as required for a tenable rejection under 35 U.S.C. § 102. The above argued differences between the claimed subject matter and the machine of Long undermines the factual determination that Long discloses high-speed envelope transport and package system identically corresponding to that claimed. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Appellant, therefore, submits that the imposed rejection of claims 1, 3, 9, 10 and 17-21 under 35 U.S.C. § 102 for lack of novelty as evidenced by long is not factually viable and, hence, solicits reversal thereof.

The Rejection of Claims 11, 15, 16 and 23 Under 35 U.S.C. § 103(a) Predicated Upon Long

Appellant incorporates herein the arguments previously advanced in traversal of the rejection of claims 1, 3, 9, 10 and 17-22 under 35 U.S.C. § 102(b) predicated upon Long. The modification to Long proposed in the § 103 rejection would not lead an artisan to orient the bending member as claimed or otherwise lead to an arrangement that meets the requirements of independent claim 1 or of independent claim 21. Dependent claims 11, 15, 16 and 23 are patentably distinct over the applied reference in view of their respective dependencies from independent claim 1 or 21. If any independent claim is non-

obvious under *35* U.S.C. § 103(a), then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Appellant, therefore, submits that the imposed rejection of claims 11, 15, 16 and 23 under 35 U.S.C. § 103 for obviousness predicated upon Long is not factually viable and, hence, solicit reversal thereof.

The Rejection of Claims 4-8, 12-14 and 24-28 Under 35 U.S.C. § 103(a) Predicated Upon Long in View of Haas

Appellant incorporates herein the arguments previously advanced in traversal of the rejection of claims 1, 3, 9, 10 and 17-22 under 35 U.S.C. § 102(b) predicated upon Long. Appellant submits that the secondary reference to Haas does not cure the argued deficiency of Long. The Examiner relied on Haas for its disclosure pertaining to vacuum ports. Appellant submits that Haas fails to disclose or suggest a bending member, much less a bending member configured to bend an envelope about an axis that is substantially perpendicular to a joint between the flap and the envelope.

Thus, even if the applied references are combined as suggested by the Examiner, the claimed subject matter will not result. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). Appellant, therefore, submits that the imposed rejection of claims 4-8, 12-14 and 24-28 under 35 U.S.C. § 103 for obviousness predicated upon Long in view of Haas is not factually viable and, hence, solicit reversal thereof.

VIII. Conclusion

Based upon the arguments submitted supra, Appellant submits that the Examiner's rejection under the first paragraph of 35 U.S.C. § 112 is not legally viable. Moreover, Appellant submits that the Examiner's rejections under 35 U.S.C. §§ 102 and 103 are factually and legally erroneous. Appellant, therefore, solicits the Honorable Board to reverse the Examiner's rejections 35 U.S.C. §§ 112, 102 and 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due under 37 C.F.R. 1.17 and 41.20, and in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Brian K. Seidleck
Registration No. 51,321

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BKS:KEG:idw
Facsimile: 202.756.8087
Date: August 2, 2006

Please recognize our Customer No. 20277 as our correspondence address.

IX. CLAIMS APPENDIX

1. A high-speed envelope transport and packing system comprising:

a conveyor for conveying an open envelope having a flap,

a packing station for inserting an object into the conveyed open envelope; and

a bending member disposed in the packing station;

wherein the bending member is configured to impart a bend in the conveyed open envelope by displacing a center portion of the conveyed open envelope relative to widthwise distal end portions of the conveyed open envelope and to maintain a bend in a conveyed open envelope until the open envelope is gripped by a gripping device in such a manner as to provide access to an interior of the open envelope or until an object is at least partially inserted into an interior of the open envelope, and

the bending member is configured to bend the open envelope about an axis that is substantially perpendicular to a joint between the flap and the open envelope.

3. A high-speed envelope transport and packing system according to claim 1,

wherein the bending member comprises a rail disposed along a direction of conveyance of the open envelope in a position substantially corresponding to a center line of the conveyed open envelope with respect to a widthwise direction of the conveyed open envelope.

4. A high-speed envelope transport and packing system according to claim 3,

wherein the rail comprises a plurality of vacuum ports.

5. A high-speed envelope transport and packing system according to claim 4,

wherein the rail disposed along a direction of conveyance of the open envelope is disposed proximal to a side of the conveyed open envelope having the flap.

6. A high-speed envelope transport and packing system according to claim 5,

wherein a front edge of the rail, relative to the direction of conveyance of the open envelope, is chamfered or curved.

7. A high-speed envelope transport and packing system according to claim 6,

wherein the rail comprises a plurality of linearly arranged vacuum port manifolds, each vacuum port manifold comprising a plurality of vacuum ports.

8. A high-speed envelope transport and packing system according to claim 7,

wherein front edges of the vacuum port manifolds, relative to the direction of conveyance of the open envelope, are chamfered or curved.

9. A high-speed envelope transport and packing system according to claim 3,

wherein a height of the rail is less than about 5.0 mm.

10. A high-speed envelope transport and packing system according to claim 3,

wherein a height of the rail is between about 1.25 mm and 1.75 mm.

11. A high-speed envelope transport and packing system according to claim 1,

wherein the at least one bending member comprises paired rails disposed along a direction of conveyance of the open envelope in positions substantially equidistant to a center line of a conveyed open envelope with respect to a widthwise direction of the conveyed open envelope.

12. A high-speed envelope transport and packing system according to claim 11, wherein each of the paired rails comprises a plurality of vacuum ports.

13. A high-speed envelope transport and packing system according to claim 12, wherein one of the rails disposed along a direction of conveyance of the open envelope is disposed proximal to a side of the conveyed open envelope having the flap.

14. A high-speed envelope transport and packing system according to claim 13, wherein front edges of the rails, relative to the direction of conveyance of the open envelope, are chamfered or curved.

15. A high-speed envelope transport and packing system according to claim 11, wherein a height of the rails is less than about 5.0 mm.

16. A high-speed envelope transport and packing system according to claim 11, wherein a height of the rails is between about 1.25 mm and 1.75 mm.

17. A high-speed envelope transport and packing system according to claim 1,

wherein the bending member comprises a channel disposed along a direction of conveyance of the open envelope in a position substantially corresponding to a central region of the conveyed open envelope with respect to a widthwise direction of the conveyed open envelope.

18. A high-speed envelope transport and packing system according to claim 17,

wherein a width of the channel is greater than about half of a width of the conveyed open envelope with respect to the widthwise direction of the conveyed envelope.

19. A high-speed envelope transport and packing system according to claim 17,

wherein a width of the channel is greater than about three-quarters of a width of the conveyed open envelope with respect to the widthwise direction of the conveyed open envelope.

20. A high-speed envelope transport and packing system according to claim 1,

wherein the bending member comprises paired channels disposed along a direction of conveyance of the open envelope in positions substantially equidistant to a center line of a conveyed open envelope with respect to a widthwise direction of the conveyed open envelope, and

wherein the paired channels are disposed to receive widthwise ends of the conveyed open envelope.

21. In a high-speed envelope transport and packing system, the improvement comprising:

a bending member configured to bend a conveyed envelope about the z-axis during conveyance of the conveyed envelope to increase the moment of inertia of the conveyed envelope about the z-axis above a corresponding moment of inertia of the conveyed envelope in a flat state,

wherein the bending member is configured to bend a conveyed envelope about an axis that is substantially perpendicular to a joint between the flap and the conveyed envelope.

23. The improvement in a high-speed envelope transport and packing system according to claim 21,

wherein the bending member comprises at least one of a center rail, a plurality of rails, a curved plate, a center channel, and a plurality of channels disposed along at least one side of a conveyed envelope, and

wherein the bending member is configured to displace a central portion of the conveyed envelope by less than about 5.0mm relative to widthwise ends of the conveyed envelope.

24. A high-speed envelope transport and packing system according to claim 1, further comprising:

a vacuum plate provided in the packing station;

wherein the vacuum plate is configured to bias an envelope and an envelope flap against the vacuum plate at least during insertion of an insert into the conveyed open envelope.

25. A high-speed envelope transport and packing system according to claim 24,

wherein the vacuum plate comprises a plurality of vacuum ports extending widthwise across a portion of the packing station corresponding to a conveyed open envelope.

26. A high-speed envelope transport and packing system according to claim 24,

wherein the vacuum plate is removably attached to the packing station.

27. A high-speed envelope transport and packing system according to claim 24,

wherein the vacuum plate is provided within a central region of the packing station corresponding to a central portion of a conveyed open envelope.

28. A high-speed envelope transport and packing system according to claim 24,

wherein the conveyor continuously conveys a plurality of open envelopes,

wherein the vacuum plate is configured to bias each of the plurality of continuously conveyed open envelopes, as well as associated envelope flaps thereof, against the vacuum plate at least during insertion of an insert into the respective one of the continuously conveyed open envelopes.

29. A high-speed envelope transport and packing system comprising:

a conveyor for continuously conveying a plurality of open envelopes,

a packing station for inserting an object into a respective one of the plurality of continuously conveyed open envelopes; and

a means for controlling a flap of each of the continuously conveyed open envelopes during insertion of an object into each of the envelopes in the packing station.

X. EVIDENCE APPENDIX

Not applicable.

XI. RELATED PROCEEDINGS APPENDIX

Not applicable. Appellant is unaware of any related proceedings.